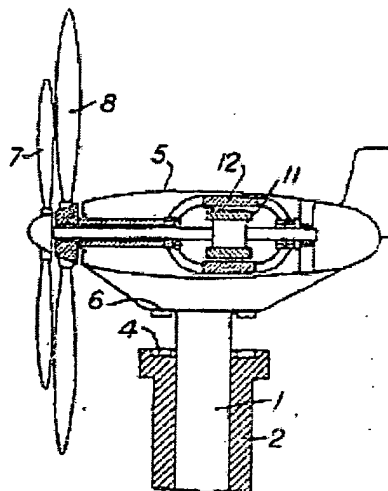


# Improvements in and relating to electric generators

Patent number: GB476716  
Publication date: 1937-12-14  
Inventor:  
Applicant: RUDOLF ARNOLD ERREN  
Classification:  
- international:  
- european: F03D1/02B; F03D11/04; H02K7/18A2  
Application number: GB19370003307 19370204  
Priority number(s): GB19370003307 19370204

## Abstract of GB476716

476,716. Driving dynamos. ERREN, R. A. Feb. 4, 1937, No. 3307. [Class 35] The armature and field magnet of a generator are driven in opposite directions by propellers or water wheels on concentric shafts extending from one end of the generator. In the form shown, the propellers 7, 8 drive the armature and field magnet 11, 12 disposed in a stream-lined casing 5 carried by a piston 1 vertically adjustable in a cylinder 2 by means of fluid pressure. The casing can move angularly about the axis of the piston except when in its lowest position when projections 6 are received in pockets 4 in the end of the cylinder 2. The dynamo may be used on aircraft. If water power is to be used, the propellers would be replaced by water wheels and the support would be modified if necessary.



Data supplied from the *esp@cenet* database - Worldwide



Applic<sup>n</sup> Date : Feb. 4, 1937.

No. 3307/37.

Complete Specification Accepted : Dec. 14, 1937.

## COMPLETE SPECIFICATION

### Improvements in and relating to Electric Generators

I, RUDOLF ARNOLD ERREN of German nationality, 423, Abbey House, Victoria Street, London, S.W.1, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to wind or water driven generators and will provide a cheap, practical economical and easily executed design.

This invention enables the r.p.m. to be kept very high and fairly constant, which permits the production of both direct and alternating current, with a comparatively small size of generator.

The invention comprises a wind or water driven electric generator wherein the armature and the field magnet are connected, the one to a propeller or water wheel rotated by the wind or water in one direction and the other to a propeller or water wheel rotated by the wind or water in the opposite direction, the propellers or water wheels being on concentric shafts both projecting from one end of the generator.

To withstand the influence of irregular and partly "bumpy" wind currents, the casing is streamlined, and is best built in the ratio of 1 : 5 (1 being the largest diameter and 5 the greatest length).

The propeller blades may be arranged with controllable pitch in any known manner.

Another feature of the invention lies also in the fact that the support of the wind driven generator consists of telescope-like columns of which one is constructed as a hollow cylinder and the other acts as a piston. With the assistance of a hydraulic device operated by oil, water or other fluid pumped into the hollow cylinder or cylinders, and with increasing or decreasing pressure the piston is moved up or down. With this upward or downward movement, it is possible to alter the height of the generator to suit the varying wind speed.

The invention has a further feature in that in the event of damage to the movable machinery of the plant, the generator can be held in a fixed position by letting the piston support down. In order to secure a fixed position for the

system when lowered and to prevent any turning movement round the vertical axis, the upper end of the outer cylindrical body of the support is provided with curved extensions placed diametrically opposite each other, in which the torpedo-shaped body comes to rest.

An embodiment of the invention is illustrated diagrammatically in the accompanying drawings wherein the telescopic column forming the support of the wind driven generator is indicated at 1. This column is slidable in the hollow cylinder 2 and is moved up or down if the pressure of the liquid fed into the hollow cylinder 2 by means of a hydraulic device 3 increases or decreases.

For maintaining the column in a fixed position when lowered, and for preventing any turning movement thereof about the vertical axis, the upper end of the outer cylindrical body 2 of the support is provided with recesses 4 in which the projections 6 of the torpedo-shaped generator casing 5 are received.

The stationary streamlined generator casing 5 is preferably so constructed that its length is five times as great as its diameter.

According to the invention the propellers 7, 8, are rotated by the wind in opposite directions, the propellers being fixed to concentric shafts 9 and 10, both projecting from one end of the generator. The shafts 9 and 10 are mechanically connected each with an electric element (11, 12). Relative movement between these elements 11, 12 enables the required generation of electric energy to be produced.

The invention also renders possible the utilisation of such generators for aircraft of all kinds, in which case it is preferable for the torpedo-shaped body not to be angularly movable about the support but fixed.

A further aspect of this invention is that electric generators of the type described may be driven by water, in which case the propellers are replaced by water wheels and the support is modified if necessary. In such a case the axis of the generator is preferably arranged vertically.

The details of construction are only by

way of example, and other variations are possible without departing from the scope of this invention, as defined in the appended Claims.

5 Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

10 1. A wind or water driven electric generator wherein the armature and the field magnet are connected, the one to a propeller or water wheel rotated by the wind or water in one direction and the  
15 other to a propeller or water wheel rotated by the wind or water in the opposite direction, the propellers or water wheels being on concentric shafts both projecting from one end of the generator.

20 2. A wind driven dynamo as claimed in Claim 1, wherein the pitch of each propeller is variable in any known manner.

3. A wind driven generator as claimed

in Claim 1, mounted on a telescopic support, the height of which is adjustable. 25

4. A generator as claimed in Claim 3, the position of which is adjusted by hydraulic means for raising or lowering the support. 30

5. A generator as claimed in Claim 3, the outer member of the telescopic support of which has its upper ends curved to engage the generator casing when in its lowest position. 35

6. A wind driven dynamo as claimed in Claim 1, wherein the casing is streamlined or torpedo-shaped and preferably the length of the casing is approximately five times greater than its maximum diameter. 40

7. Electric generators substantially as described and shewn in the accompanying drawing.

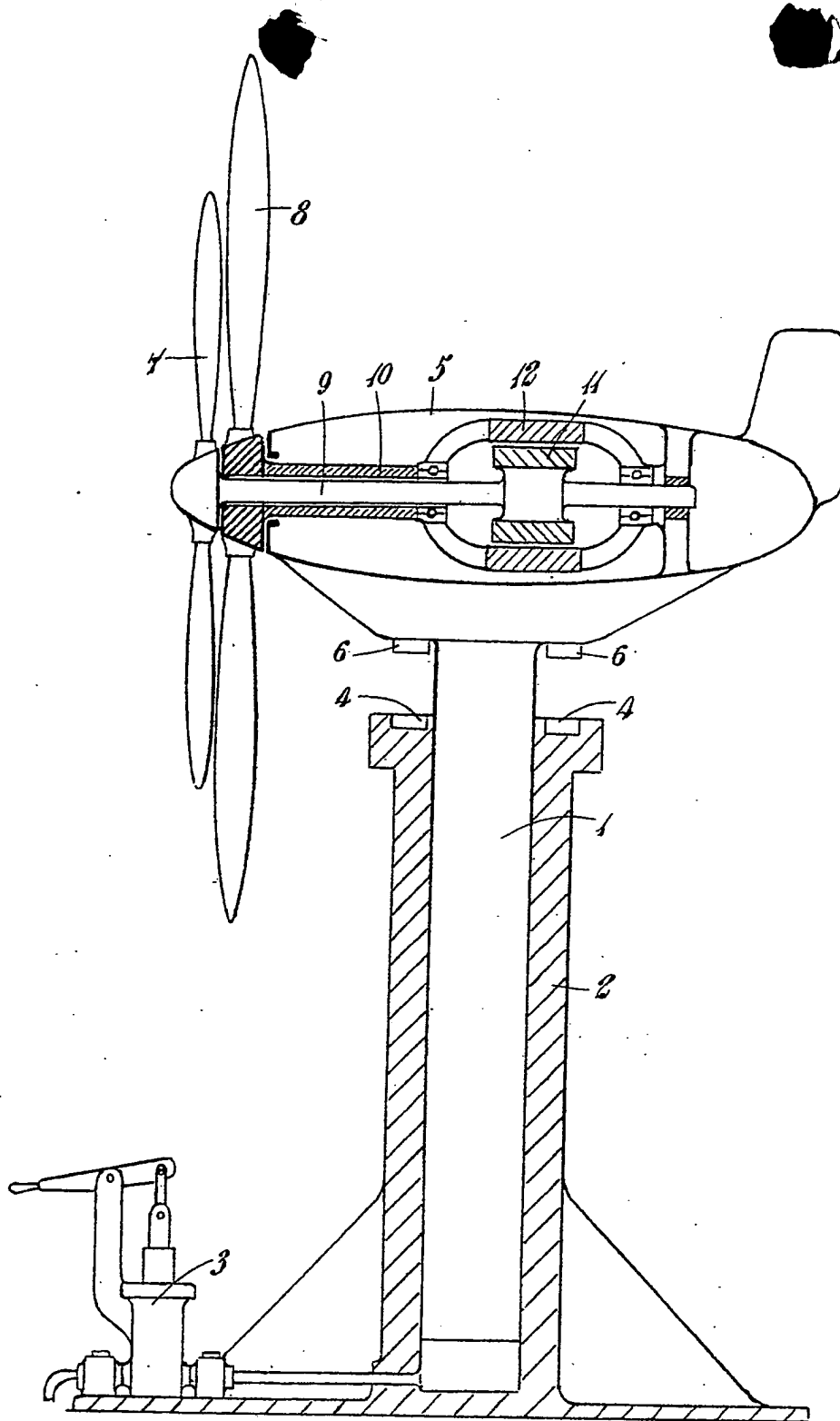
Dated the 3rd February, 1937.

R. A. ERREN.

Leamington Spa: Printed for His Majesty's Stationery Office, by the Courier Press.—1938.

BEST AVAILABLE COPY

[This Drawing is a reproduction of the Original on a reduced scale.]



Malby & Sons, Photo-Lith.

BEST AVAILABLE COPY